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10/681,649	10/08/2003	Amy L. Nehls	67565	6105
48940 7590 01/29/2007 FITCH EVEN TABIN & FLANNERY 120 S. LASALLE STREET SUITE 1600 CHICAGO, IL 60603-3406			EXAMINER THAKUR, VIREN A	
			ART UNIT 1761	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/29/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/681,649	Applicant(s) NEHLS ET AL.	
	Examiner Viren Thakur	Art Unit 1761	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 17-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10/8/03</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of claims 1-16 in the reply filed on August 23, 2006 is acknowledged. Because the applicant did not distinctly and specifically point out any errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "118" and "110" have both been used to designate the helical flow channel. Additionally, the reference character "12" has been used to designate a plate, as shown in Figure 1 and an outlet, as shown in Figure 9. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the

Art Unit: 1761

applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "1" on page 18, line 11. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 1761

5. Claim 3-7, 8, 11, 13-14 and 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
 - a. Claim 3 recites the limitations “generally circular”, “aligned perpendicular relative to a longitudinal axis ...” and “velocity effective to....” Regarding the limitation “generally circular” it is not clear as to the extent to which the channel needs to have a circular shape to be considered generally circular. Regarding the limitation “aligned perpendicular relative to a longitudinal axis...” it is not clear as to what is meant by the channel being aligned relative to a longitudinal axis. Regarding the limitation “velocity effective to...” it is not clear as to what velocity is effective to generate a circular flow. For examination purposes it is interpreted that any velocity (except for zero) can be considered effective to generate a circular flow.
 - b. Claim 11 also recites the limitation “effective to provide.” It is not clear as to what temperature and depth are considered effective to provide for slicability, especially since slicability is also dependent on the type of food product and the means used for slicing said food product.
 - c. Claims 5 and 7, recite the limitation “general direction opposite to....” The term “general” does not properly define the metes and bounds of the claim. It is not clear as to how general of a direction could be considered opposite to that of the feed direction. For examination purposes, any

direction that is not flowing in the direction of the feed is considered in a general direction opposite to that of the feed direction.

- d. Claim 8 recites the limitation "substantial seal." It is not clear as to what type of seal could be considered substantial. For examination purposes any seal is considered substantial. It is further not clear as to how a seal can be formed if the food product is on an advancement mechanism. Claim 8, further recites the limitation "generally flexible wiper element." It is not clear as to how flexible of a wipe element can be considered generally flexible. For examination purposes, any flexibility in the wiper element is considered generally flexible.
- e. Claims 13-14 recites the limitation "substantially closing." It is not clear as to what type of closing is considered substantial.
- f. Claim 15 recites the limitation "sufficient to provide steam treatment." It is not clear as to what period of time is sufficient to provide steam treatment. For examination purposes, any period of time is considered sufficient to provide steam treatment.
- g. Claims 11 and 15 recite the limitation "predetermined." In any method, a rate could be predetermined at any point by the operator, designer, etc.. therefore this is a though process that is not considered a tangible limitation to a step in a method.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-2, 9, 11, 15-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Wilson et al. (US 5711981). As recited in instant claim 1, Wilson et al. disclose a method of treating an outer surface of a food product comprising, placing a food product having an outer surface on an advancement mechanism (Figure 2, Item 25); providing a steam sleeve (Figure 3, Item 14) for generating a flow of steam having selected properties to treat the outer surface of the food product, the steam sleeve having an entrance (Figure 1, Item 30; Column 9, Lines 25-30) and an exit (Figure 1, Item 38; Column 9, Lines 25-30); passing the food product in a feed direction (Figure 1, See arrows near Item M) through the steam sleeve using the advancement mechanism (Column 5, Lines 53-64); and generating the flow of steam in the steam sleeve while the food product is passing therethrough, the flow of steam contacting the outer surface of the food product for treatment of the outer surface of the food product (Column 6, Line 42 to Column 7, Line 27). As recited in instant claim 2, Wilson et al. disclose wherein the step of generating the flow of steam in the steam sleeve includes the step of circulating the flow of steam in the steam sleeve within a channel (Figure

9A, Item 136) formed in an interior of the sleeve having an inlet for the introduction of the steam into the sleeve (Figure 9A, Not labeled, see arrow showing inlet to sleeve, to the left of Item 164) and an outlet for the removal of the steam and condensate from the sleeve (Column 10, Line 65 to Column 11, Line 1; Column 7, Line 66 to Column 8, Line 7). As recited in instant claim 9, Wilson et al. disclose wherein the step of passing the food product in a feed direction through the steam sleeve using the advancement mechanism includes the step of continuously advancing the food product during the step of generating the flow of steam in the steam sleeve (Column 7, Lines 58-65). As recited in instant claim 11, Wilson et al. disclose wherein the passing of the food product in a feed direction through the steam sleeve using the advancement mechanism occurs at a predetermined rate (Column 7, Lines 58-65). Moving the meat continuously is considered a predetermined rate. Furthermore, Wilson et al. disclose wherein the meat is heated to a predetermined depth and temperature (Column 7, Lines 12-27). Based on the rejection of instant claim 11 under 112, 2nd paragraph, above, the predetermined depth and temperature disclosed by Wilson et al. would be effective for slicability of the food product. As recited in instant claim 15, Wilson et al. disclose retracting the advancement mechanism away from a trailing face of the food product while the trailing face of the food product is positioned within the steam sleeve for a predetermined period of time. Since the advancement mechanism of Wilson et al. can be continuous or batch (or semi-batch) the advancement mechanism always moving away from the

trailing face of the food. Thus, said advancement mechanism is retracted from the trailing face of the food. The exit to the steam chamber is only opened after complete steaming (Column 9, Lines 25-30), therefore the trailing face of the food product is also sufficiently steamed. As recited in instant claim 16, Wilson et al. disclose a cooling operation immediately prior to advancing the food product into a steam sleeve (Column 8, Lines 23-37). By removing the water using air, it is interpreted that Wilson et al. disclose cooling the food product. In evaporating the water or allowing the water to drip from the food product, it is known that heat energy is withdrawn from the surface of the food product, thus cooling said product.

8. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Mauer et al. (US 5741536). Mauer et al. disclose a method of treating an outer surface of a food product comprising placing a food product on an advancement mechanism (Figure 1, Item 61); providing a steam sleeve (Figure 1, Item 60) for generating a flow of steam to treat the outer surface of the food product, the steam sleeve having an entrance (Figure 1, Item 62) and an exit (Figure 1, Item 64); passing the food product (Figure 1, Item 10) in a feed direction through the steam sleeve using the advancement mechanism (Figure 1, Item 60; Column 7, Lines 9-20); generating the flow of steam in the steam sleeve while the food product is passing therethrough (Column 7, Lines 29-39), the flow of steam contacting the outer surface of the food product for treatment of the outer surface

of the food product (Column 7, Lines 21-39). As recited in instant claim 2, Mauer et al. disclose circulating the flow of steam in the steam sleeve within a channel (Figure 1, Item 68 and Not labeled, see between item 61). The steam (Figure 1, Item 68) passes in between the levels of the conveyor. The space between the levels is considered the channel through which steam enters and exits. Since said steam enters through one side of said channel and exits through the opposite end of said channel, it is interpreted that Mauer et al. disclose circulating the flow of steam in a channel formed in an interior of the sleeve, having an inlet for introduction of the steam and an outlet for removal of the steam. Mauer et al. further disclose wherein the conveyor is perforate (Column 7, Lines 15-20) so as to allow for dripping of juices. Since the food product is exposed to steam, it is known that steam condensate would also drip from the food product. As recited in instant claim 3, the channel is considered generally circular. The claim limitations recite that any longitudinal axis can be referred and thus the invention of Mauer et al. teach a food product having a longitudinal axis perpendicular to said channels. In light of the rejection of the instant claim under 112, 2nd paragraph, since the advancement mechanism is moving in a helical path, the Examiner interprets that the steam that contacts the food at each of the above said channels would contact the food tangentially and thus would have a tangential velocity that is effective to generate circular flow directing at least some of the steam condensation away from the outer surface of the food product. The Examiner notes that in order to meet the claim limitations, the

steam must only have a tangential velocity effective in generating circulating flow. As recited in instant claim 4, Mauer et al. disclose wherein the flow of steam is through a helical channel (Figure 1, Item 68 and Not labeled, see between item 61 . Since the channels are in between the conveyor path, each channel is of a helical shape. As recited in instant claims 5-7, the flow of steam through the helical channel is both in the same and opposite direction of the feed direction, since the feed direction is both radial and vertical. The flow of steam has both inlets and outlets on each side of the conveyor, since steam is applied from both sides of the conveyor and exit said channels on the respective opposite sides of the conveyor.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

Art Unit: 1761

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
11. Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson et al. (US 5711981). Wilson et al. disclose as cited above. Wilson et al. further disclose wherein after the method for steam pasteurization, said meat is ready for further processing such as cutting, packaging, freezing or otherwise (Column 5, Lines 11-14).

Wilson et al. is silent in teaching wherein the step of passing the food product through a steam sleeve occurs immediately prior to the slicing station. However; Wilson et al. disclose wherein the step of cutting can occur immediately after the entire meat pasteurization process has been completed. Since the process of sterilizing the meat product occurs at such high temperatures, Wilson et al. teach wherein coolant is sprayed onto the surface of the meat so as to prevent the meat from being cooked at its surface (Column 10, Lines 20-22). Nevertheless, immediately after the prevention of surface cooking, said meat product could be further processed by cutting, or any other process such as packaging or freezing. Given these teachings, it would have been obvious to one having ordinary skill in the art to cut, package, freeze, or perform any other processing step after the pasteurization process had been completed. Therefore, providing a slicing station would not have provided a patentable feature over the prior art.

Regarding instant claims 13 and 14, Wilson et al. teach wherein a sealing gate is positioned adjacent the exit opening of the steam sleeve, the sealing gate being selectively shiftable between a sealing position substantially closing the exit opening and an unsealing position allowing access to the exit opening (Column 9, Lines 25-30 and Lines 59-61; Column 10, Lines 12-17).

12. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson et al. (US 5711981) in view of Pikus et al. (US 6098307). Wilson et al. teach as cited above. Wilson et al. further teach the need for ensuring that moisture is not resident on the surface of the meat by providing for a dewatering section (Column 7, Lines 46-51). Based on the rejection of instant claim 3 under 112, 2nd paragraph, the channel is considered generally circular (Figure 3, Item 34) and is perpendicular to a longitudinal axis of the food product. The claim limitations recite that any longitudinal axis can be referred and thus the invention of Wilson et al. teach a food product having a longitudinal axis perpendicular to said channel.

Wilson et al. is silent in teaching introducing the steam into the entrance of the channel with a tangential velocity to direct at least some of the steam condensation away from the outer surface of the product.

Pikus et al. disclose a method for thermally processing starch and starch based products (Column 2, Lines 8-21), wherein nozzles introduce steam at a high velocity so as to create turbulence in the material layer, which improves heat

transfer to the material (Column 5, Lines 38-50). As can be seen in Figure 2, the nozzle (58) is curved toward a wall of the cylindrical body and thus the steam would exit the nozzle with a velocity tangential to a product disposed within said cylindrical body.

Both Wilson et al. and Pikus et al. are analogous in that steam is provided to a system for the purpose of sterilization of a food product disposed therein. As discussed above, although not explicitly teaching tangential velocities, Wilson et al. strive to ensure that moisture does not remain on the food product, since it is taught that excess moisture would absorb the heat energy that performs the pasteurization. Therefore, it would have been obvious to one having ordinary skill in the art to modify Wilson et al. to apply a high velocity jet of stream as taught by Pikus et al. for the purpose of creating a turbulence that improves the heat transfer of the energy of the steam to the food product. By using a high velocity steam jet introduced into a chamber, as taught by Pikus et al., it would have further been obvious to one having ordinary skill in the art that the turbulence created by the steam would aid in moving condensation away from the food product. Such non-laminar flow would have aided in preventing condensate from contacting or remaining on the food product.

In addition, Reid (US 2131753), who teaches a helical passage through which to pass steam for autoclaving and Farkas et al. (US 3586510) who teach passing a food product and steam into a helical passage, provide additional evidence that helical channels for passing steam are well known in the art.

Based on these teachings, providing a helical channel for the method step of heat treating a food would not have provided a patentable feature over the prior art.

13. Claims 3-7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson et al. (US 5711981) in view of Gressly (US 2682827).

Wilson et al. disclose as cited above. Wilson et al. further teach the need for ensuring that moisture is not resident on the surface of the meat by providing for a dewatering section (Column 7, Lines 46-51). Based on the rejection of instant claim 3 under 112, 2nd paragraph, the channel is considered generally circular (Figure 3, Item 34) and is perpendicular to a longitudinal axis of the food product. The claim limitations recite that any longitudinal axis can be referred and thus the invention of Wilson et al. teach a food product having a longitudinal axis perpendicular to said channel.

Regarding instant claim 3, Wilson et al. are silent in teaching the step of introducing the steam into the entrance of the channel with a tangential velocity to generate a circular flow directing at least some of the steam condensation away from the outer surface of the food product. Regarding instant claims 4, 5 and 6, Wilson et al. are silent in directing the flow of steam through a helical channel; Regarding instant claims 7, Wilson et al. are silent in teaching wherein the flow of steam is in the same general direction as that of the feed direction.

Regarding instant claim 10, Wilson et al. are silent in teaching multiple single revolution channels each having their own inlet and outlet.

Gressly discloses an apparatus for sterilizing foodstuffs and beverages wherein high pressure steam is injected into the sterilizing chamber through multiple inlets. The multiple inlets are angled so as to form a helical passage of steam within said chamber (Column 3, Lines 22-52). By allowing the high pressure steam to form several helical passages, the turbulence within the sterilizing chamber is increased, which thus allows for uniform heating of all particles (Column 4, Lines 24-29).

Regarding instant claims 3 and 4, by forming a helical path for the high pressure steam, as taught by Gressly, one having ordinary skill in the art would have recognized that the helical path would also create a tangential velocity of the steam with respect to the food product disposed therein. Since said steam is at high pressure and creates turbulence, said steam would have been effective to direct condensation away from the food product. Given these teachings, it would have been obvious to one having ordinary skill in the art to modify Wilson et al. to use multiple inlets that form helical passages of high pressure steam, as taught by Gressly for the purpose of ensuring uniform sterilization of the food product. Therefore, to provide a helical channel for the passage of the steam for the step of circulating the flow of steam would not have provided a patentable feature over the prior art since the combination of the prior art also teaches forming a helical path for the steam circulation. In addition, one having ordinary skill in the art

would have recognized that high pressure steam that creates turbulence would have aided in preventing contact of steam condensate with the food product: the helical path of the steam creates centrifugal forces that would drive heavier contents outwardly (radially) and the turbulence would have aided in removing any condensate that did come into contact with the foodstuff. Reid (US 2131753), who teaches a helical passage through which to pass steam for autoclaving and Farkas et al. (US 3586510) who teach passing a food product and steam into a helical passage, provide additional evidence that helical channels for passing steam are well known in the art. Based on these teachings, providing a helical channel for the method step of heat treating a food would not have provided a patentable feature over the prior art.

Regarding instant claim 5, Wilson et al. teach a general direction opposite to that of the feed direction, as taught above, but is silent in teaching a helical channel. For the reasons discussed above, the instant limitation would not have provided a patentable feature over the prior art.

Regarding instant claims 6 and 10, Wilson et al. teach multiple inlets (Figure 5, Item 136) and multiple outlets (Figure 9A, Item 170 (2)) for each channel that carries the flow of steam. For the reasons discussed above, the instant limitation would not have provided a patentable feature over the prior art.

Regarding instant claim 7, Gressly et al. teach wanting uniform heating of the foodstuff, as discussed above and further disclose the flow of steam in the same direction as that of the feed direction (Column 3, Lines 46-52). Wilson et

al. also teach uniform and complete sterilization of the food product therein by using a positive pressure chamber (Column 6, Lines 54-57). Given these teachings, it would have been obvious to one having ordinary skill in the art at the time the invention was made to flow the steam in a direction opposite to that of the feed direction and in the same direction as that of the feed direction for the purpose of ensuring uniform heating.

Regarding instant claim 10, Gressly teaches multiple inlets, therefore given the teachings of Gressly, as discussed above, each inlet would have created a helical path for the steam. Also, as discussed above, Wilson et al. disclose multiple inlets and outlets for the channels that flow steam. Therefore it would have been obvious to one having ordinary skill in the art to modify Wilson et al. to use multiple inlets so as to create multiple helical paths, as taught by Gressly for the purpose of ensuring uniform heating of the foodstuff. Additionally, one having ordinary skill in the art would have recognized that high pressure steam that creates turbulence would have aided in preventing contact of steam condensate with the food product: the helical path of the steam creates centrifugal forces that would drive heavier contents outwardly (radially) and the turbulence would have aided in removing any condensate that did come into contact with the foodstuff.

14. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson et al. (US 5711981) in view of Kennedy et al. (US 2153572). Wilson et al. disclose

as applied above. Wilson et al. further disclose a seal formed at the entrance and exit of the steam chamber, but are silent in teaching a generally flexible wiper element forming a substantial seal between the outer surface of the food product and at least one of the entrance and exit of the steam sleeve.

Kennedy et al. disclose wiper elements used in the process of removing moisture from fruit (Page 1, Column 2, Lines 3-9). The apparatus of Kennedy et al., provides an advancement mechanism for the removal of moisture from the food stuff. This is similar to the invention of Wilson et al., which as discussed above, advances a foodstuff through a chamber that strives to remove the moisture from the foodstuff. Based on the rejection of instant claim 8 under 112, 2nd paragraph, above, by contacting the fruit with a wiping element, the apparatus of Kennedy et al. provides a substantial seal. One having ordinary skill in the art would have recognized that the wiping element can be a brush of several types. Randrup (US 3545024) provides further support of additional wiping elements used for removing moisture (Figure 4, Item 22; Figure 5, Item 12; Figure 7, Item 12a; Figure 8, Item 12b; Figure 9, Item 12c). Furthermore, it would have been obvious to one having ordinary skill in the art that the removal of moisture from the food product of Kennedy et al. also aids in preserving the freshness of the food product, as moisture is a known source for pathogens. Given these teachings, it would have been obvious to one having ordinary skill in the art to incorporate wiper elements to the invention of Wilson et al. as taught by Kennedy et al. for the purpose of ensuring removal of moisture from the surface of the food

product. Such a modification of Wilson et al. would ensure that the condensate would be removed from the food product, thus allowing better exchange of heat from the *steam* (and not the condensate) for pasteurization.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 2353256, US 3545024, US 2027590, US 3291680 and US 5409576 disclose wiping means for removing moisture from a product. US 5045021 discloses heat treatment of a food product by circulating air with steam for the purpose of providing uniform heating thereof. US 5407692 discloses circulation of steam to tangentially contact the product that is being spirally conveyed through the apparatus. US 2898245 discloses injecting steam for heat treatment of a beverage wherein the steam forms a helical path within the heat treatment apparatus. US 5439694 discloses heat treatment of poultry wherein the poultry is conveyed into a steam chamber for sterilization. US 1798120 teaches the use of high velocity steam for destroying substances in food. US 3586510 discloses a device for treating food products at pressures above or below atmospheric which includes a helical pumping system for conveying material into and out of the treatment zone. US 5189948 discloses a spiral vapor cooker that conveys a food product spirally upward while heat treating said

Art Unit: 1761

product. US 2131753 discloses a multiwall autoclave comprising helical channels for steam.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Viren Thakur whose telephone number is (571)-272-6694. The examiner can normally be reached on Monday through Friday from 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (571)272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Viren Thakur

Examiner

Art Unit: 1761



MILTON I. CANO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700